MODIFICATION DESIGN OF STRUCTURE PUSAT
RISET ITS BUILDING (PARTLY USE PRESTRESSED BEAM)

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ABSTRACT

This last project took Pusat Riset ITS building in Surabaya as the object re-design of the building plan. Pusat Riset ITS building serves to collect the creation of students, ITS college teacher and batch of laboratory from central studies that have joined.

Pusat riset ITS building using ordinary reinforced concrete construction and has a total height of 11-storey building. The building was built by using a bearer moment frame system medium (srpmnm) in accordance with condition quake zone which is located in Surabaya. On the 11th floor will be planned as a seminar room to support activities in the area of ITS Surabaya campus. Hence, it takes a large room with no column at the center of the room. This building is actually using a steel frame roof which will be recalculated using the concrete slab roof so beam structure is needed to reach the long spans with relatively small dimensions but still powerful and efficient. One of the alternatives design solution of the 11th floor is using prestressed concrete structures which combine high strength concrete and high strength steel by pulling the steel and concrete to hold it so it makes concrete in a depressed state.
From the calculation, the result is prestressed beam on the 11th floor which has 21.6m of length is the dimension of 75/110 with two pieces of tendon type VSL 5-31 consist of 62 strand.

Key words: prestressed; beam; Pusat Riset building; ITS; SRPMM